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10/596,746	04/16/2007	Frank Theodor Gudermann	37998-237472	1040
26694	7590	07/07/2011	EXAMINER	
VENABLE LLP P.O. BOX 34385 WASHINGTON, DC 20043-9998			WHITE, DENNIS MICHAEL	
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Please find below and/or attached an Office communication concerning this application or proceeding.

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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 10/596,746  
Filing Date: April 16, 2007  
Appellant(s): GUDERMANN ET AL.

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Ann S. Hobbs  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed 6/8/2011 appealing from the Office action  
mailed 11/8/2011.

**(1) Real Party in Interest**

The examiner has no comment on the statement, or lack of statement, identifying by name the real party in interest in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The following is a list of claims that are rejected and pending in the application:

Claims 1, 5-18, 20-22, and 25-27 are rejected.

**(4) Status of Amendments After Final**

The examiner has no comment on the appellant's statement of the status of amendments after final rejection contained in the brief.

**(5) Summary of Claimed Subject Matter**

The examiner has no comment on the summary of claimed subject matter contained in the brief.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The examiner points out the claims 23-24 should not be included in the appellant's statement of the grounds of rejection to be reviewed on appeal because they have been cancelled. Therefore, claims 1, 5-18 and 20-22, 25-27 are rejected under 35 U.S.C. 103(a). Every ground of rejection set forth in the Office action from which the appeal is taken (as modified by any advisory actions) is being maintained by the

examiner except for the grounds of rejection (if any) listed under the subheading "WITHDRAWN REJECTIONS." New grounds of rejection (if any) are provided under the subheading "NEW GROUNDS OF REJECTION."

#### **NEW GROUND(S) OF REJECTION**

Claims 1, 5-18, 20-22, 25-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bukshpan et al (US 2002/0198928) in view of Ravkin et al (US 2003/0134330). This new ground of rejection was necessitated by the amendment filed after final on 2/8/2011 that incorporated the limitation of claim 2 into claim 1 and cancelled claims 2-4.

#### **(7) Claims Appendix**

The examiner has no comment on the copy of the appealed claims contained in the Appendix to the appellant's brief.

#### **(8) Evidence Relied Upon**

20020198928	Bukshpan et al	12-2002
20030134330	Ravkin et al	7-2003

#### **(9) Grounds of Rejection**

#### **NEW GROUND(S) OF REJECTION**

Claims 1, 5-18, 20-22, 25-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bukshpan et al (US 2002/0198928) in view of Ravkin et al (US 2003/0134330).

Regarding claims 1 and 20, Bukshpan et al teach a method and device for recording microscopic images with high optical resolution of cells ("particles or

organisms") disposed on the surface of light sensitive layer 4A on a sample carrier 240 provided with fluidics system 116 ("flow cuvette") on a motorized stage 106. The carrier is scanned by moving the stage motorized stage ("wherein the optical sensor and measuring cell are moving relative to one another while the contents of the measuring cell are imaged" "measuring cell is moving along the sensor". It is noted that "imaged" is sufficiently broad to read on scanned by detectors) and the images of the cells disposed on the surface of the layer are acquired by the camera ("recording the image of the suspension by an optical sensor") and stored in memory (Para. 0162). Bukshpan teaches the system 100 may (optionally) further include a fluidics system 116. The fluidics system 116 may include suitable fluidics elements for controllably adding or removing fluids to the sample carriers ("suspended in a liquid" "introducing the suspension in a measuring cell" "flowing cuvette"). If a developer is not initially included in the solution including the sample cells or particles, the fluidics system 116 may add a suitable developer solution to the samples for performing the development of the photosensitized regions of the layer 4 (Para. 0147). Bukshpan et al are silent that the camera ("sensor") is moving along the measuring cell and the measuring cell is imaged onto said optical sensor by the movement of optical elements.

Ravkin et al teach a method for multiplexed detection of analytes by reacting them with probe molecules attached to carriers. Ravkin et al teach the method includes sensing trans-illumination such as absorbance or microscope pattern such as bright field, dark field, or phase contrast or epi-illumination such as to detect fluorescence. Ravkin teach the light source and the detector can be on the same side of the carrier

such as a microplate for the epi-illumination or positioned on opposite sides of the carrier for trans-illumination. Ravkin et al further teach the detector may detect light by moving from well(s) to well(s), through movement of the detector, the sample holder, or both ("moving relative to one another while the contents are imaged" "sensor is moving"). Accordingly, detector 1918 may be fixed or may be configured to move relative to microplate 1912, to enable scanning. When detector 1918 is fixed, stage 1920 may be configured to move portions of microplate 1912 past detector 1918. In some embodiments, an optical element (see below) may be movable to direct light from different portions of the microplate to the detector. It is desirable to move the detector instead of the carrier to minimize movement that could disrupt the reaction within the carrier.

Simple substitution of one known element for another to obtain predictable results is held to be obvious. Therefore, it would have been obvious to one of ordinary skill in the art to substitute the step of moving the detector of Ravkin et al for the step of moving the stage of Bukshpan because they are equivalent steps to scan sample carriers in order measure trans-illumination or epi-illumination assays and to provide the above advantage of minimize movement that could disrupt the reaction within the carrier.

Regarding claims 5-7, Bukshpan et al teach the immobilization ("sinking or rising of the objects within the cuvette can be effected by one or more of the following: biological techniques, physical techniques, chemical techniques, sedimentation, and buoyancy") of particles to the light sensitive surface and imaging the adhering particles

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with the light source on one side and the detector on the other (Para. 0090 and 0129) ("allowing the particles to sink onto the ground of the measuring cell or into a region above the ground, wherein only part of the measuring cell contains the particles or organisms to be examined, imaging the ground or the region above with a high optical resolution, and covering the ground or the region above by the optical sensor" "allowing the particles to rise to an upper limiting surface of the measuring cell or into a region below the upper limiting surface, wherein only part of the measuring cell contains the particles or organisms to be examined, imaging the upper limiting surface or the region below with a high optical resolution, and covering the upper limiting surface or the region below by the optical sensor").

Regarding claims **8-10, 21-22**, Bukshpan et al teach the optical system can be either trans-illumination ("transmitted light illumination, wherein a light source is situated on one side of the measuring cell, and the optical sensor and an objective sensor are located on the opposite side of the measuring cell" "bright field illumination") (Para. 0129 and Fig. 4A) or epi-illumination ("providing incident light illumination by situating a, light source, an objective, and the optical sensor on the same side of the measuring cell") (Para. 0130).

Regarding claims **11-13, 16, 27**, Bukshpan et al teach the transmitted light can be dark field illumination, phase contrast illumination (Para. 0129) and fluorescence illumination (Para. 0127).

Regarding claims **14-15**, Bukshpan et al teach the illuminating the objects in the measuring cell with a defined spectral intensity distribution of the incident light by a

suitable light source or the insertion of one or more suitable filters ("enables the optical sensor to be illuminated with a defined spectral intensity distribution of the incident light") (Para. 0123).

Regarding claim 17, Bukshpan et al teach the cells can be pre-treated with Giemsa stain ("admixing the suspension with stains prior to the introducing step") (Para. 0230-0234).

Regarding claim 18, Bukshpan et al teach the using of FITC visualization filter and the use of Cy3 visualization filter for the same field of view (It is noted that "changing the one or more filters automatically or manually" is read on the use of two different filters, since there is a changing either automatically or manually of the filters) (Para. 0359).

Regarding claims 25-26, Bukshpan et al teach condenser optics 262 and filter 260 are on the same side as the light source ("a screen and lens system on the same side of the measuring cell as the light source" "the screen and lens system is a condenser") (Para. 0156).

#### **(10) Response to Argument**

Appellants argue that Bukshpan et al fails to teach any method or device in which a flow cuvette and an optical sensor move relative to one another during the optical recording of microscopic images. This is not convincing because Bukshpan discloses the carrier is scanned by moving the stage motorized stage while a camera acquires images. It is noted that "while the contents of the flow cuvette are imaged" is sufficiently

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broad to read on the step of scanning by detectors that occurs while the stage is moving in Bukshpan.

Appellants argue that Ravkin does not disclose movement of a detector during the measurement but instead discloses a system in which a detector moves stepwise from one reaction well to the next reaction well of a microtitre plate, without intermediate measurement. It is noted that the claim requires the relative movement occur "while the contents of the flow cuvette are imaged" that is sufficiently broad to read on the scanning that includes movement as seen in Ravkin when the detectors scan by moving from well to well. There is no requirement in the claims that there are intermediate measurements. Furthermore, the Ravkin reference teaches it is obvious to move either the detector or the carrier when relative motion is desirable. Bukshpan meets all the limitations required of scanning during movement of the motorized stage. Ravkin teaches the equivalence of either the detector or carrier moving during scanning.

**(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

This examiner's answer contains a new ground of rejection set forth in section (9) above. Accordingly, appellant must within **TWO MONTHS** from the date of this answer exercise one of the following two options to avoid **sua sponte dismissal of the appeal** as to the claims subject to the new ground of rejection:

(1) **Reopen prosecution.** Request that prosecution be reopened before the primary examiner by filing a reply under 37 CFR 1.111 with or without amendment, affidavit or other evidence. Any amendment, affidavit or other evidence must be relevant to the new grounds of rejection. A request that complies with 37 CFR 41.39(b)(1) will be entered and considered. Any request that prosecution be reopened will be treated as a request to withdraw the appeal.

(2) **Maintain appeal.** Request that the appeal be maintained by filing a reply brief as set forth in 37 CFR 41.41. Such a reply brief must address each new ground of rejection as set forth in 37 CFR 41.37(c)(1)(vii) and should be in compliance with the other requirements of 37 CFR 41.37(c). If a reply brief filed pursuant to 37 CFR 41.39(b)(2) is accompanied by any amendment, affidavit or other evidence, it shall be treated as a request that prosecution be reopened before the primary examiner under 37 CFR 41.39(b)(1).

Extensions of time under 37 CFR 1.136(a) are not applicable to the TWO MONTH time period set forth above. See 37 CFR 1.136(b) for extensions of time to reply for patent applications and 37 CFR 1.550(c) for extensions of time to reply for ex parte reexamination proceedings.

Respectfully submitted,

/DENNIS M WHITE/

Examiner, Art Unit 1772

**A Technology Center Director or designee must personally approve the new ground(s) of rejection set forth in section (9) above by signing below:**

/ROBERT J. WARDEN, Sr./

Supervisory Patent Examiner, Art Unit 1700

Conferees:

/In Suk Bullock/  
Supervisory Patent Examiner, Art Unit 1772

/ROBERT J. WARDEN, Sr./  
Supervisory Patent Examiner, Art Unit 1700